ABSTRACT OF THE DISCLOSURE

A projection optical system according to the present invention whose image side numerical aperture is greater than or equal to 0.75, and which forms an image of a first object upon a second object using light of a predetermined wavelength less than or equal to 300 nm, comprises: a first lens group G1 of positive refractive power; a second lens group G2 of negative refractive power; a third lens group G3 of positive refractive power; and a fourth lens group G4 of positive refractive power, and: the first lens group G1, the second lens group G2, the third lens group G3 and the fourth lens group G4 are arranged in order from a side of the first object; and a distance D in mm along an optical axis between an optical surface of the fourth lens group G4 closest to the second object, and the second object, satisfies a condition of $0.1<D<5$.